STATE OF CALIFORNIA - STATE AND CONSUMER SERVICES AGENCY ARNOLD SCHWARZENEGGER, Governor
CALIFORNIA BUILDING STANDARDS COMMISSION
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833
(916) 263-0916 FAX (916) 263-0959

November 1, 2010

Brian J. Crudo, Battalion Chief/Fire Marshal
Fire Department, Fire Prevention Bureau
City of Albany
1000 San Pablo Avenue
Albany, CA 94706

Dear Mr. Crudo,

This is to acknowledge receipt of the City of Albany submittal pertaining to Ordinance No. 2010-06 with findings on September 20, 2010. As the law states, no local modification or change to the California Building Standards Code (Code) shall become effective or operative for any purpose until the finding and the modification or change have been filed with the California Building Standards Commission (the Commission).

As a reminder, local modifications are specific to a particular edition of the Code. They must be readopted and filed with the Commission in order to remain in effect when the next triennial edition of the Code is published. In addition, should you receive Fire Protection District ordinances for ratification, it is required to submit the ratified ordinances to the Department of Housing and Community Development [H&SC Section 13869.7(c)], attention State Housing Law Program Manager, rather than the Commission.

This letter attests only to the filing of these local modifications with the Commission, which is not authorized by law to determine the merit of the filing. If you have any questions or need any further information, you may contact me at (916) 263-0916.

Sincerely,

Jane G. Taylor
Senior Architect

cc: Chron
Local Filings

City of Albany

1000 SAN PABLO AVE. • ALBANY, CALIF. 94706 • TELEPHONE (510) 528-5775 • FAX (510) 528-5774

FIRE DEPARTMENT
FIRE PREVENTION BUREAU

3 August 2010

California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

Dear Madam or Sir,

Enclosed you will find "The Code of the City of Albany, also known as "Albany Municipal Code", Chapter XI, Fire Prevention", the update to the Fire Prevention Section and the City of Albany's "Finding of Fact".

Ordinance No. 2010-06, An Ordinance of the Albany City Council Amending Chapter XI, Fire Prevention of the Albany Municipal Code to include Regulations for Smoke Alarms and Smoke Detector (Subsection 11-4), was adopted by the Albany City Council on July 19, 2010.

The Finding of Fact includes our Climatic, Geographical and Topographical conditions to justify the necessity of adopting these local ordinances. There are two (2) maps, "Seismic Hazard Zones", 3 pages and "Geographical Map" (topographical/surfacial deposits), 2 pages, for referencing.

The Albany Fire Department's Fire Prevention Office has updated the "Fire Prevention Ordinance" to reference the 2007 CBC, Title 24, Part 2 and CFC, Title 24, Part 9, the 2006 IBC and IFC, and the National Fire Protection Association's 2006, NFPA 1, *Uniform Fire Code*.

If you have any questions, please call me at (510) 528-5775, or Fire Chief Marc McGinn at (510) 528-5773.

Thank you,

Brian J. Crudo
Battalion Chief/Fire Marshal
Disaster Preparedness Officer
Operations Chief

cc: Marc McGinn, Fire Chief
Jeff Bond, Planning Manager
Dave Henderson, Chief Building Inspector

ORDINANCE NO. 2010-06

AN ORDINANCE OF THE ALBANY CITY COUNCIL AMENDING CHAPTER XI, FIRE PREVENTION OF THE ALBANY MUNICIPAL CODE TO INCLUDE REGULATIONS FOR SMOKE ALARMS AND SMOKE DETECTORS

WHEREAS, the City of Albany has adopted a Fire Prevention Regulations in the form of Chapter XI of the Albany Municipal Code; and

WHEREAS, smoke alarms and smoke detectors serve a vital role in preventing property damage, injury or death caused by structure fires;

WHEREAS, there are two types of smoke detection technologies commonly used in smoke detectors;

WHEREAS, "ionization" detectors uses a very small amount of radioactive material to detect invisible particles generated by flame;

WHEREAS, "photoelectric" detectors uses a light-source to detect the presence of smoke;

WHEREAS, the vast majority of smoke detectors installed in residences in Albany use the ionization technology;

WHEREAS, ionization detectors generate more nuisance alarms that result in occupants disabling smoke detectors;

WHEREAS, studies have concluded that ionization detectors respond slowly to smoldering fires that generate heavy smoke but initially little flame; and

WHEREAS, proposed regulations are necessary because of local climatic, geological or topographical conditions, including the fact that Albany is a high-density community with older structures;

WHEREAS, on July 6, 2010 the Albany City Council held a duly noticed public hearing on the draft ordinance to amend Chapter XI regarding Smoke Alarms and Smoke Detectors.

NOW, THEREFORE, THE ALBANY CITY COUNCIL DOES HEREBY ORDAIN AS FOLLOWS:

Section 1: Purpose

Chapter XI of the Albany Municipal Code is hereby amended to include a new Subsection 11-4 titled "Smoke Alarms and Smoke Detectors" to consist of the following text:

"Smoke alarms and smoke detectors serve a vital role in preventing property damage, injury or death caused by structure fires. The purpose of these regulations is to adopt regulations that require smoke alarms and smoke detectors that generate fewer nuisance alarms and react more quickly to smoldering fires that generate heavy smoke but initially little flame."

Section 2: Definitions

Chapter XI of the Albany Municipal Code, Section 11-4.1 titled "Definitions" is hereby amended to include the following text:

a. Smoke alarm – a self-contained battery operated device that both detects the presence of smoke and produces an audible and/or visual alarm.

b. Smoke detector – a device connected to the building electrical system and other building alarms that is designed to detect the presence of smoke and produce an audible and/or visible alarm

c. Ionization type smoke detector or alarm - a device that uses a small amount of radioactive material to detect invisible particles generated by flame.

d. Photoelectric-only type smoke detector or alarm - a device that uses a light-source to detect the presence of smoke.

e. Dual type smoke detector or alarm - a device that uses both photoelectric and ionization methods.

f. Required location – Locations for smoke detectors or smoke alarms that are required by California Fire Code, the California Building Code, or other codes or standards adopted by the City of Albany.

Section 3: Exemptions

Chapter XI of the Albany Municipal Code is hereby amended to include a new Subsection 11-4.2 titled "Exemptions" to consist of the following text:

The requirements of this section shall not apply to projects that have an active building permit application on or before the effective date of the ordinance.

Section 4: Smoke Alarm/Smoke Detector Requirement

Chapter XI of the Albany Municipal Code is hereby amended to include a new Subsection 11-4.3 titled "Smoke Alarm Smoke Detector Requirement" to consist of the following text:

a. Any construction that is required to install an additional smoke alarm or smoke detector under the California Fire Code, the California Building Code, or other codes or standards adopted by the City of Albany, shall be required to upgrade all required devices in the building to photoelectric-only type devices in all required locations.

b. Any renovation of existing habitable space that exceeds a threshold established by the City Council shall be required to upgrade all required smoke alarms or smoke detectors in the building to photoelectric-only type devices in all required locations.

c. Prior to the sale of any real property, a property owner shall upgrade the smoke alarm/smoke detector system to photoelectric-only type devices.

d. Prior to the issuance of a home occupation permit, a property owner shall upgrade the smoke alarm/smoke detector system to photoelectric-only type devices.

e. Multi-family residential structures containing three housing units or more are required to maintain photoelectric-only smoke alarm/smoke detector system.

f. Property owners are responsible for testing the effectiveness of existing smoke alarms or smoke detectors per manufacturer's instructions. Required smoke alarms or smoke detectors that are determined to be ineffective shall be replaced with photoelectric-only type smoke devices.

g. All required smoke alarms and smoke detectors shall be replaced upon the expiration of the warranty period of the installed device. Replacement devices must be photoelectric-only type devices.

h. Dual type smoke alarms or smoke detectors are prohibited in required locations.

i. Installed devices must comply with requirements of UL 217, NFPA 72, and manufacturer instructions.

j. Nothing in this ordinance shall prohibit or discourage the additional use of ionization or dual type alarms in additional locations.

Section 5. Implementation Procedures

Chapter XI of the Albany Municipal Code is hereby amended to include a new Subsection 11-4.4 titled "Implementation Procedures" to consist of the following text:

The Fire Chief may establish policies and procedures for public education, review of permit applications, and performance of inspections associated with implementation of this section, including issuance of a certificate of compliance prior to the sale of any property certifying that the smoke alarm/smoke detector system has been upgraded to photoelectric-only type smoke devices.

Section 6. Hardship or Infeasibility Exemption.

Chapter XI of the Albany Municipal Code is hereby amended to include a new Subsection 11-4.5 titled "Hardship or Infeasibility Exemption" to consist of the following text:

a. Exemption. If an Applicant for a non-exempt project believes that circumstances exist that make it a hardship or infeasible to meet the requirements of this Section, they may apply for an exemption or reduction in requirements as set forth below. In applying for an exemption, the burden is on the Applicant to show hardship or infeasibility.

b. Application. If an Applicant for a non-exempt project believes such circumstances exist, the Applicant may apply to the Fire Chief for an exemption at the time of application submittal.

c. Granting of Exemption: The granting of an Exemption shall be made by the Fire Chief. If an exemption is granted, the Applicant shall be required to comply with this Chapter in all other respects.

d. Denial of Exemption. If the Fire chief determines that it is possible for the Applicant to fully meet the requirements of this Chapter, they shall so notify the Applicant in writing.

Section 7. Severability.

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of the ordinance, and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared invalid.

Section 8: Publication and Effective Date.

This ordinance shall be posted at three public places within the City of Albany and shall become effective thirty days after the date of its posting.

Farid Jamdul

~~Joanne Wile~~

Mayor - Vice

ATTACHMENT 1

Findings Relating to Local Fire and Building Code Modification

The following sections depict specific local conditions that are justification for modification in the local fire and building codes. The local conditions that directly affect such modifications are climatic, geographic and topographical. These conditions are described below.

Local Conditions:

Local conditions will have a tremendous impact on the ability of existing codes to adequately prevent loss of life and property. In some cases, as in the City of Albany, there are existing factors that require special attention to accomplish more effective prevention of: 1) major fire loss, 2) major earthquake damage, 3) loss of life and property damage in general. In order to provide for these conditions it is necessary to modify and strengthen the existing State Fire and Building Standards Code.

The City of Albany has a population of approximately 17,000 with a relatively high urban density, located within a bounded area of about 1 square mile. Although a small geographic area, the City is exposed to a number of natural hazards, as described in the next sections.

1. **CLIMATIC:**

A. Precipitation: Precipitation within the city varies as it does throughout the East Bay. Using the Alameda County numbers as a guide, the city receives an average of 20 inches per year. The majority of the rainfall occurs during the months of November through April. Albany has experienced both drought and flooding conditions over the years, and must prepare for both extremes.

B. Relative Humidity: Humidity ranges from 60% during the day to 80% at night. During summer and early fall months, it may drop to 20% or lower.

C. Temperature: Albany temperatures are moderated by the San Francisco Bay and fog conditions. Variation between day and night temperatures can be significant. Average lows are in the low 50's and average highs are in the high 60's. During some periods in the summer and early fall, temperatures can climb into the 90's.

D. Wind: Prevailing winds are from the southwest, although winds are experienced from almost every direction at some point in the year. Average wind speeds are from 5 to 20 mph, although occasionally there may be gusts of up to 30 mph or greater. While the city experiences the cooling effects of the fog and the Bay, there are periods when the city experiences "Diablo" type winds. Diablo winds come from the northeast and are comparable to the "Santa Ana" winds of the LA Basin area of the State.

E. Summary: These climatic conditions have a direct impact on the intensity, size, and

acceleration of fires in the community. Periods in which there is little rainfall, low humidity, and high winds create conditions that are conducive to conflagration-type fires, particularly when considerations are made for the high-density nature of housing, as well as the existence of some wildland interface, as described in the next section.

2. GEOGRAPHIC AND TOPOGRAPHIC:

A. Geographic Location: The City of Albany is the northern-most city of Alameda County. It is bounded by Berkeley on the south and east, El Cerrito and Richmond to the north. The Albany/El Cerrito/Richmond border is also the county line separating Alameda County and Contra Costa County. The runs the Hayward Fault is between one-quarter and one-half mile to the east of the city boundary. USGS scenarios have predicted the Northern segment of this fault system can produce earthquakes as large as magnitude 7.5, and currently this segment has the highest probability in the Bay Area of producing the next large earthquake. Albany periodically experiences small to moderate earthquakes, with epicenters all around the bay area.

B. Topography: The city has a unique topographic feature known as "Albany Hill," which rises prominently along the East Bay Shoreline. A large section of the hill has been dedicated as an open space preserve with heavy vegetation. Other sections of the hill have high-density housing, including several high-rises on the northwestern face of the Hill. Other areas have narrow winding roads that make emergency response access difficult.

C. Transportation Corridors and Emergency Access: Albany has Interstates 80 and 580 within its boundaries, along with 2 rail-lines and 2 large diameter underground fuel pipelines from the Chevron Refinery. San Pablo Avenue (SR 123) bisects the city running north/south, and the BART system also bisects the city, with a stop just across the Albany border to the north in El Cerrito. With expected damage from an earthquake, access to the city may be difficult, which will directly impact any assistance that is requested from the county or other emergency mutual aid agreements.

CONCLUSION:

The local climatic, geographical and topographical conditions described above must be taken into consideration when examining the adequacy of existing fire and building code standards. From the information provided above, it is clear there are conditions that will potentially create higher risks for property and life, in terms of fire prevention and suppression efforts, the frequency, spread, acceleration and intensity of fires involving either structures or open space. These conditions provide the necessary justification for changing or otherwise strengthening the fire and building codes as they relate to improving life safety and the reduction of property damage with regard to fire prevention.

City of Albany

1000 SAN PABLO AVENUE • ALBANY, CALIFORNIA 94706-2295

CITY ADMINISTRATOR
PH. (510) 528-5710
FAX (510) 528-5797

CITY ATTORNEY
PH. (510) 524-9205
FAX (510) 526-9190

CITY CLERK
PH. (510) 528-5720
FAX (510) 528-5797

CITY COUNCIL
PH. (510) 528-5720
FAX (510) 528-5797

COMMUNITY DEVELOPMENT & ENVIRONMENTAL RESOURCES
- Building
- Engineering
- Environmental Resources
- Maintenance
- Planning

PH. (510) 528-5760
FAX (510) 524-9359

FINANCE & ADMINISTRATIVE SERVICES
CITY TREASURER
PH. (510) 528-5730
FAX (510) 528-2743

FIRE & EMERGENCY MEDICAL SERVICES
PH. (510) 528-5771
FAX (510) 528-5774

PERSONNEL
PH. (510) 528-5714
FAX (510) 528-5797

POLICE
PH. (510) 525-7300
FAX (510) 525-1360

RECREATION & COMMUNITY SERVICES
1249 Marin Avenue
PH. (510) 524-9283
FAX (510) 528-8914
- Friendship Club/ Childcare Program
  PH. (510) 524-0135
- Senior Center
  PH. (510) 524-9122
  FAX (510) 524-8940
- Teen Center
  PH. (510) 525-0576

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA) ss
CITY OF ALBANY)

I, JACQUELINE L. BUCHOLZ, City Clerk of the City of Albany, California, do hereby certify that the whole number of members of the City Council of said City of Albany is five and that the foregoing is a true and correct copy of Ordinance No. 2010-06 which was passed and adopted by the said City Council, approved and signed by the Mayor of said City, and attested by the City Clerk of said City, all at a regular meeting of the said Council on the 19th day of July 20 10 A.D., and that the same was so passed and adopted by the following votes and duly published or posted according to State law.

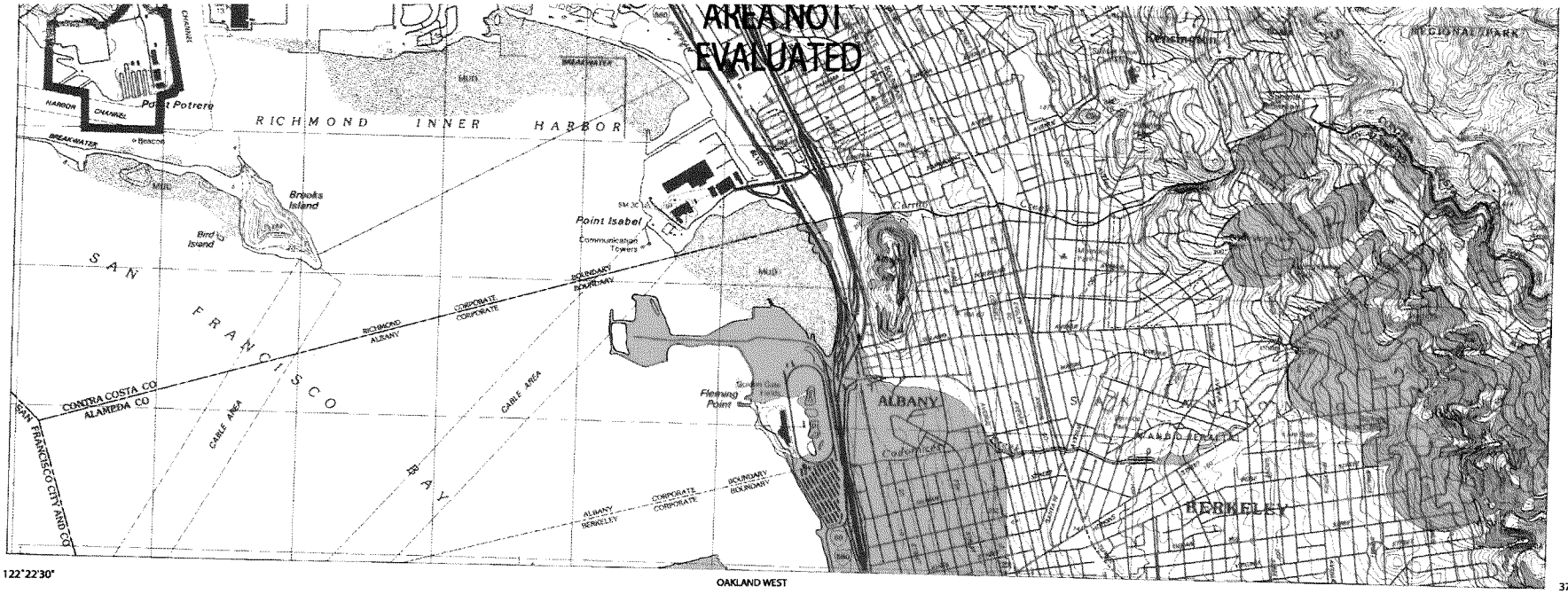
AYES: Council Members Atkinson, Lieber, Thomsen, Vice-Mayor Javandel & Mayor Wile

NOES: None

ABSENT: None

In witness whereof, I have hereunto set my hand and affixed the official seal of the City of Albany, this 20th day of July, 20 10.

JACQUELINE L. BUCHOLZ, CMC
CITY CLERK



Base Map prepared by U.S. Geological Survey, 1995.
Zones of required investigation boundaries may reflect updated digital topographic data that can differ significantly from contours shown on the base map.

PURPOSE OF MAP

This map will assist cities and counties in fulfilling their responsibilities for protecting the public from the effects of earthquake-triggered ground failure as required by the Seismic Hazards Mapping Act (Public Resources Code Sections 2690-2699.6).

For information regarding the general approach and recommended methods for preparing this map, see DMG Special Publication 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California*.

For information regarding the scope and recommended methods to be used in conducting the required site investigations, see DMG Special Publication 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*.

For a general description of the Seismic Hazard Mapping Program, the Seismic Hazards Mapping Act and regulations, and related information, please refer to the website at www.conservation.ca.gov/cgs/.

IMPORTANT - PLEASE NOTE

1) This map may not show all areas that have the potential for liquefaction, landsliding, strong earthquake ground shaking or other earthquake and geologic hazards. Also, a single earthquake capable of causing liquefaction or triggering landslide failure will not uniformly affect the entire area zoned.

2) Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides. This situation typically exists at or near the toe of existing landslides, downslope from rockfall or debris flow source areas, or adjacent to steep stream banks.

3) This map does not show Alquist-Priolo earthquake fault zones, if any, that may exist in this area. Please refer to the latest official map of earthquake fault zones for disclosures and other actions that are required by the Alquist-Priolo Earthquake Fault Zoning Act. For more information on this subject and an index to available maps, see DMG Special Publication 42.

4) Landslide zones on this map were determined, in part, by adapting methods originally developed by the U.S. Geological Survey (USGS). Landslide hazard maps prepared by the USGS typically use experimental approaches to assess earthquake-induced and other types of landslide hazards. Although aspects of these new methodologies may be incorporated in future California Geological Survey (CGS) seismic hazard zone maps, USGS maps should not be used as substitutes for these Official SEISMIC HAZARD ZONES maps.

5) U.S. Geological Survey base map standards provide that 90 percent of cultural features be located within 40 feet (horizontal accuracy) at the scale of this map. The identification and location of liquefaction and earthquake-induced landslide zones are based on available data. However, the quality of data used is varied. The zone boundaries depicted have been drawn as accurately as possible at this scale.

6) Information on this map is not sufficient to serve as a substitute for the geologic and geotechnical site investigations required under Chapters 7.5 and 7.8 of Division 2 of the Public Resources Code.

7) DISCLAIMER: The State of California and the Department of Conservation make no representations or warranties regarding the accuracy of the data from which these maps were derived. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

SCALE 1:24,000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETER

STATE OF CALIFORNIA

SEISMIC HAZARD ZONES

Delineated in compliance with
Chapter 7.8, Division 2 of the California Public Resources Code
(Seismic Hazards Mapping Act)

RICHMOND QUADRANGLE

OFFICIAL MAP

Released: February 14, 2003

STATE GEOLOGIST

MAP EXPLANATION

Zones of Required Investigation:

Liquefaction

Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground-water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

NOTE: Seismic Hazard Zones identified on this map may include developed land where delineated hazards have already been mitigated to city or county standards. Check with your local building/planning department for information regarding the location of such mitigated areas.

DATA AND METHODOLOGY USED TO DEVELOP THIS MAP ARE PRESENTED IN THE FOLLOWING:

Seismic Hazard Zone Report of the Richmond 7.5-Minute Quadrangle, Alameda County California: California Geological Survey, Seismic Hazards Zone Report 070.

For additional information on seismic hazards in this map area, the rationale used for zoning, and additional references consulted, refer to CGS's World Wide Web site

www.conservation.ca.gov/cgs/

P91

KEY

FAULTS ARE COLOR CODED TO CORRESPOND WITH THEIR STRUCTURAL SUBZONE (SEE HFGEO.TXT FOR DISCUSSION OF SUBZONES)

- San Pablo subzone
- Castro Valley subzone
- San Leandro subzone
- Fremont subzone

THE FOLLOWING FAULTS WITHIN THE HAYWARD FAULT ZONE ARE INDEPENDANT STRUCTURALLY FROM SUBZONES

- Creeping strand of the Hayward fault (modified from Lienkaemper, 1992)
- Chabot fault

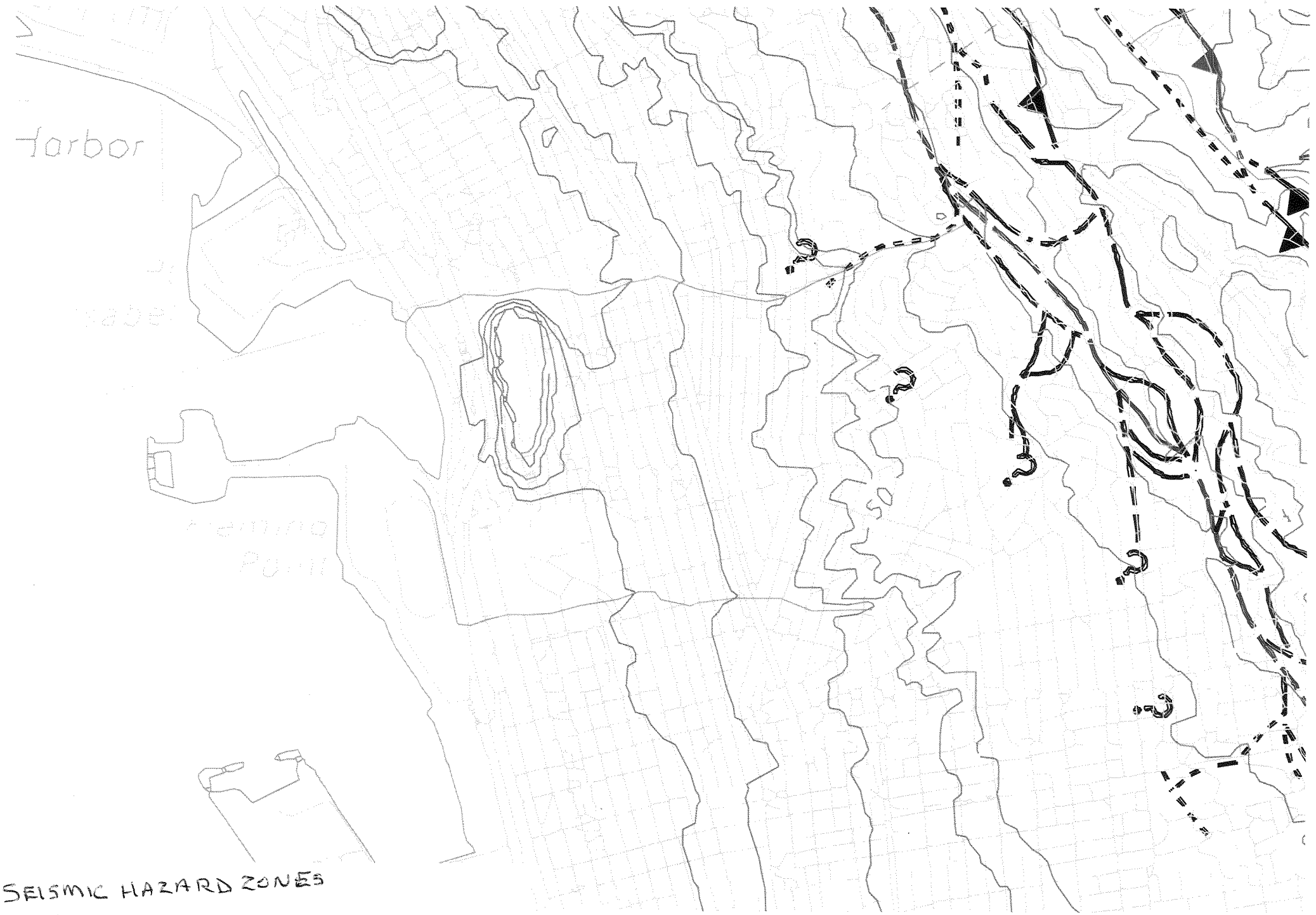
FAULTS THAT MARK THE EASTERN BOUNDARY OF THE HAYWARD FAULT ZONE ARE NOT CONSIDERED PART OF THE ZONE

- Eastern boundary faults

ALL FAULTS ARE SHOWN IN THE FOLLOWING MANNER

- Fault, certain
- Fault, approx. located
- Fault, inferred
- Fault, concealed
- Fault, inferred, uncertain
- Fault, concealed, uncertain
- Thrust or reverse fault, certain
- Thrust or reverse fault, approx. located
- Thrust or reverse fault, inferred
- Thrust or reverse fault, concealed
- Attenuation fault, certain
- Attenuation fault, approx. located

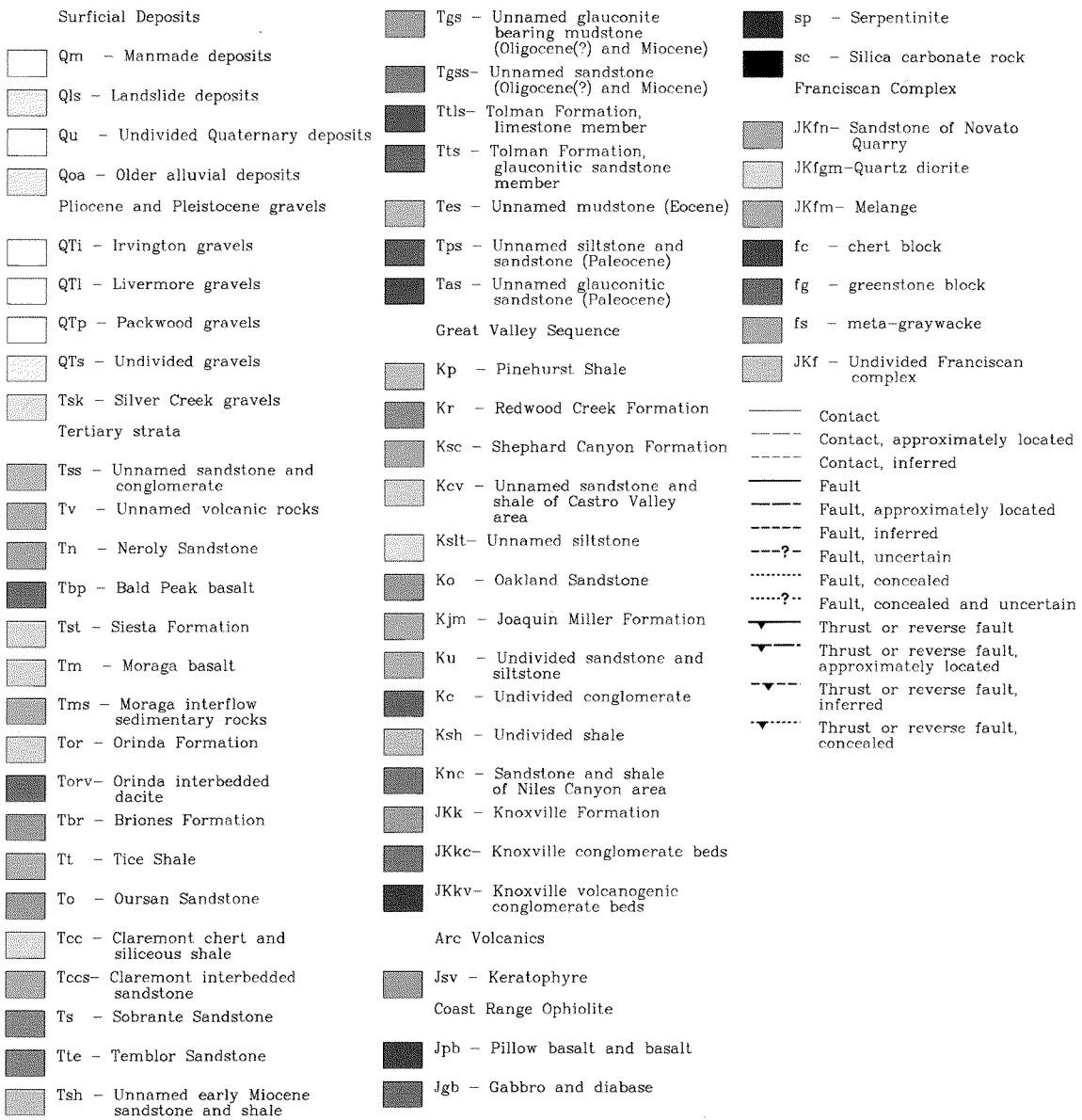
SEISMIC HAZARD ZONES
pg3



SEISMIC HAZARD ZONES

pg 2

pg1 Topographical + Surficial Deposits


Surficial Deposits
Qm – Manmade deposits
Qls – Landslide deposits
Qu – Undivided Quaternary deposits
Qoa – Older alluvial deposits
Pliocene and Pleistocene gravels
QTi – Irvington gravels
QTl – Livermore gravels
QTp – Packwood gravels
QTs – Undivided gravels
Tsk – Silver Creek gravels
Tertiary strata
Tss – Unnamed sandstone and conglomerate
Tv – Unnamed volcanic rocks
Tn – Neroly Sandstone
Tbp – Bald Peak basalt
Tst – Siesta Formation
Tm – Moraga basalt
Tms – Moraga interflow sedimentary rocks
Tor – Orinda Formation
Torv– Orinda interbedded dacite
Tbr – Briones Formation
Tt – Tice Shale
To – Oursan Sandstone
Tcc – Claremont chert and siliceous shale
Tccs– Claremont interbedded sandstone
Ts – Sobrante Sandstone
Tte – Temblor Sandstone
Tsh – Unnamed early Miocene sandstone and shale
Tgs – Unnamed glauconite bearing mudstone (Oligocene(?) and Miocene)
Tgss– Unnamed sandstone (Oligocene(?) and Miocene)
Ttls– Tolman Formation, limestone member
Tts – Tolman Formation, glauconitic sandstone member
Tes – Unnamed mudstone (Eocene)
Tps – Unnamed siltstone and sandstone (Paleocene)
Tas – Unnamed glauconitic sandstone (Paleocene)
Great Valley Sequence
Kp – Pinehurst Shale
Kr – Redwood Creek Formation
Ksc – Shephard Canyon Formation
Kcv – Unnamed sandstone and shale of Castro Valley area
Kslt– Unnamed siltstone
Ko – Oakland Sandstone
Kjm – Joaquin Miller Formation
Ku – Undivided sandstone and siltstone
Kc – Undivided conglomerate
Ksh – Undivided shale
Knc – Sandstone and shale of Niles Canyon area
JKk – Knoxville Formation
JKkc– Knoxville conglomerate beds
JKkv– Knoxville volcanogenic conglomerate beds
Arc Volcanics
Jsv – Keratophyre
Coast Range Ophiolite
Jpb – Pillow basalt and basalt
Jgb – Gabbro and diabase
sp – Serpentinite
sc – Silica carbonate rock
Franciscan Complex
JKfn– Sandstone of Novato Quarry
JKfgm–Quartz diorite
JKfm– Melange
fc – chert block
fg – greenstone block
fs – meta-graywacke
JKf – Undivided Franciscan complex
Contact
Contact, approximately located
Contact, inferred
Fault
Fault, approximately located
Fault, inferred
Fault, uncertain
Fault, concealed
Fault, concealed and uncertain
Thrust or reverse fault
Thrust or reverse fault, approximately located
Thrust or reverse fault, inferred
Thrust or reverse fault, concealed

pg 2 T+SD